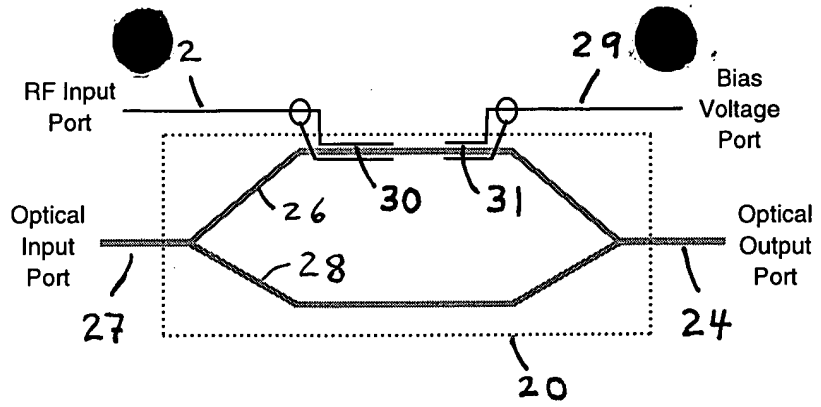


Figure 1

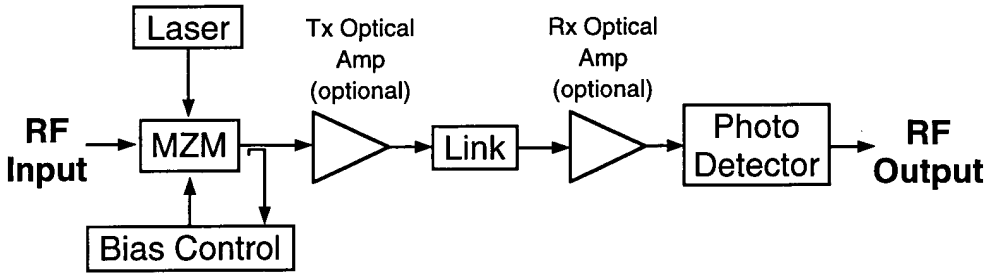


Figure 2

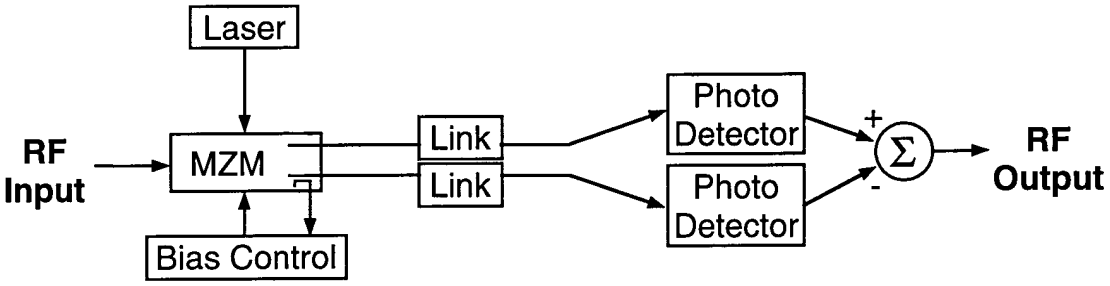


Figure 3

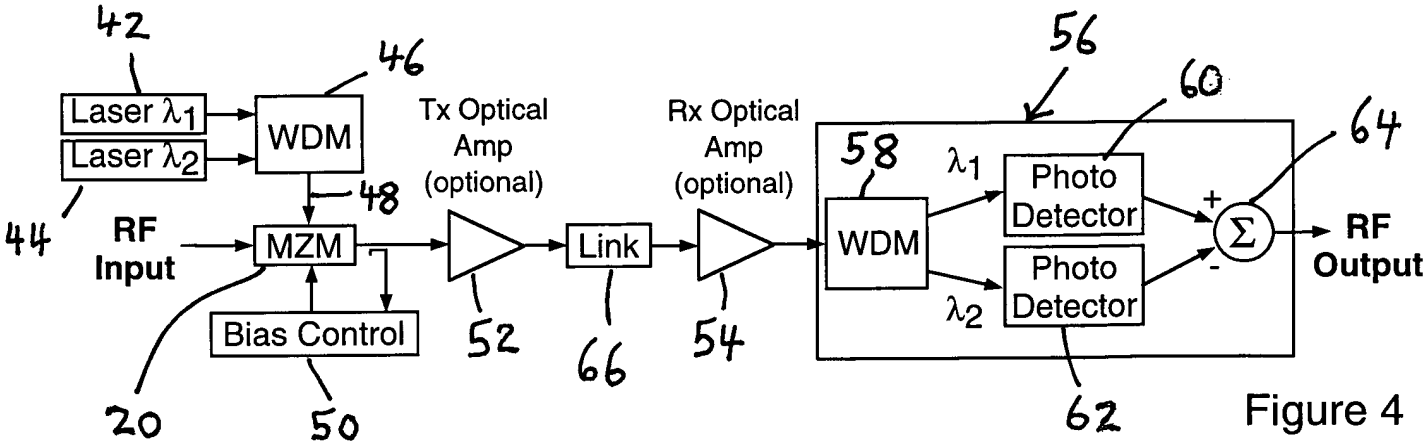


Figure 4

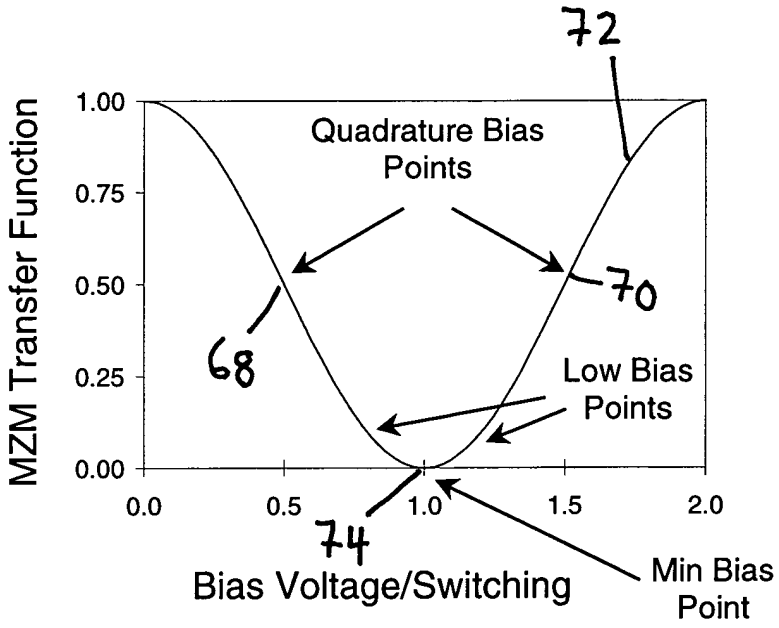

72
MZM Transfer Function
1.00
0.75
0.50
0.25
0.00
Quadrature Bias Points
70
68
Low Bias Points
0.0
0.5
1.0
1.5
2.0
74
Bias Voltage/Switching
Min Bias Point

Figure 5

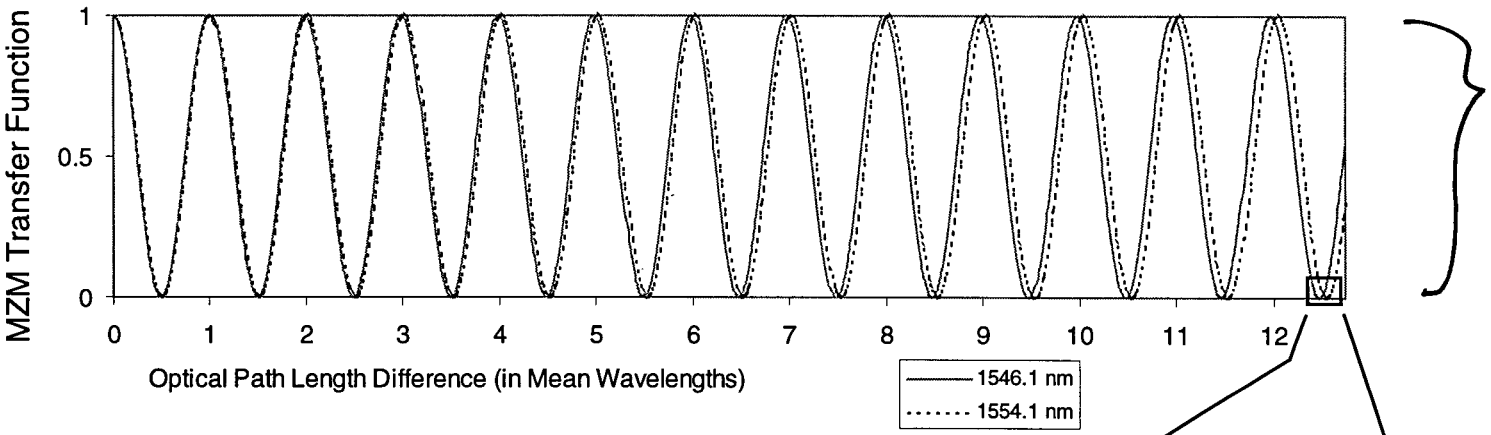


Figure 6A

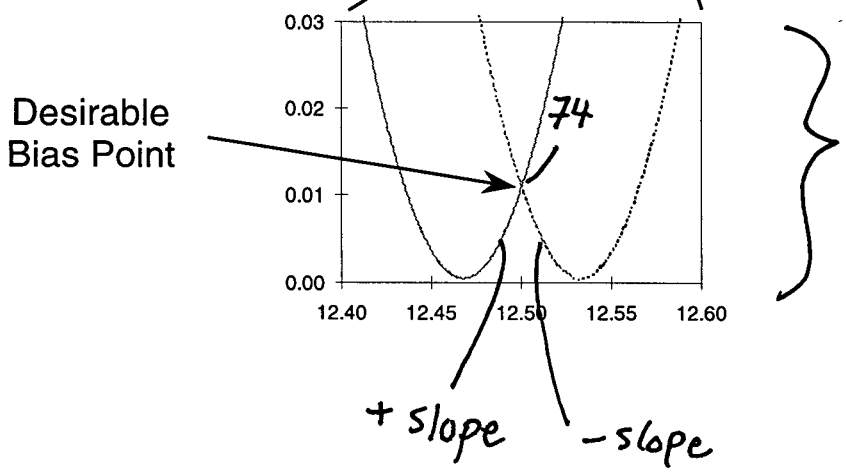


Figure 6B

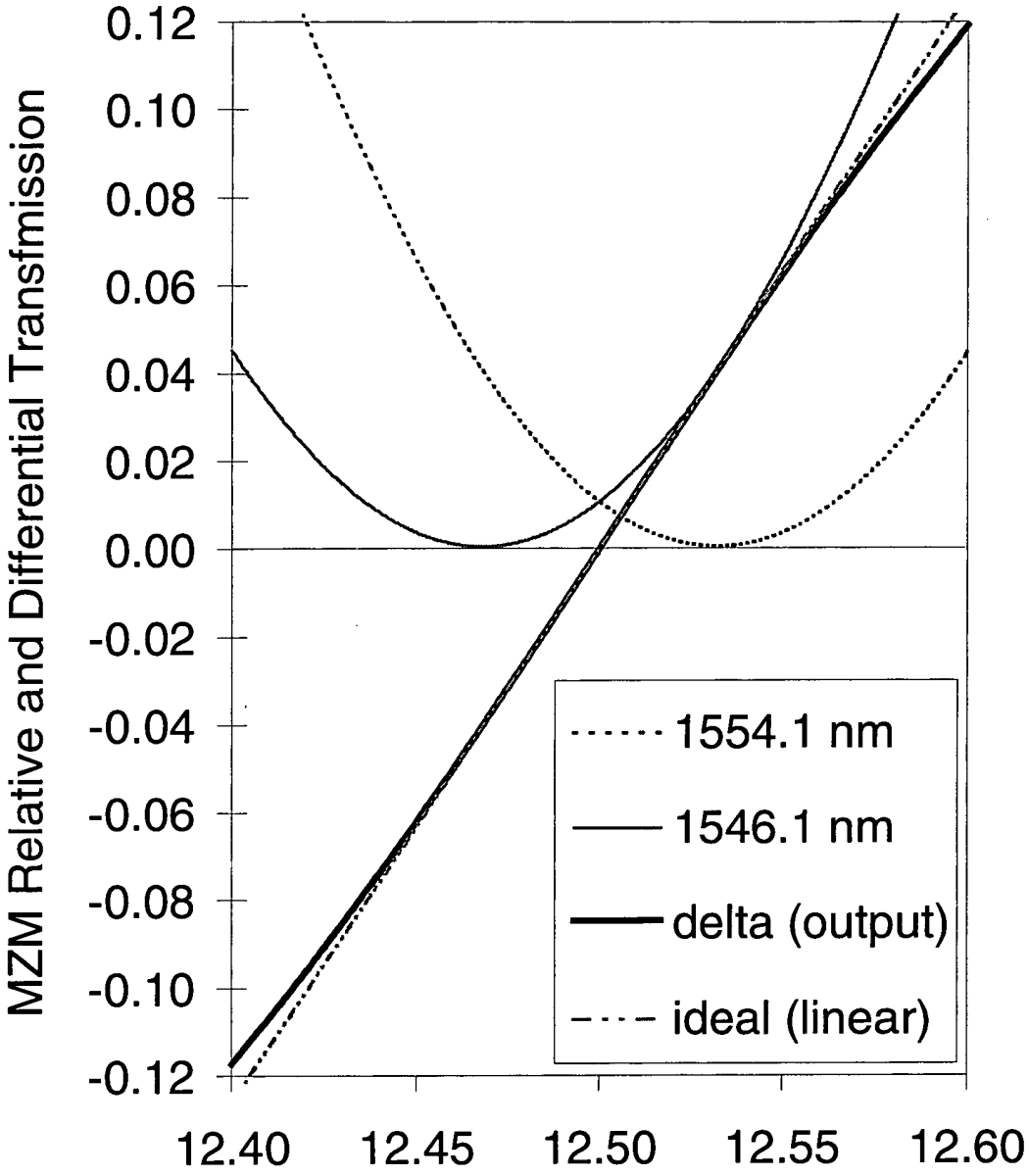

MZM Relative and Differential Transfmission
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
12.40
12.45
12.50
12.55
12.60
1554.1 nm
1546.1 nm
delta (output)
ideal (linear)
Optical Path Length Difference
due to pre-bias, bias voltage and
RF input signal voltage

FIG 7

Low-biasing Improves
$SFDR_3$ and Sensitivity

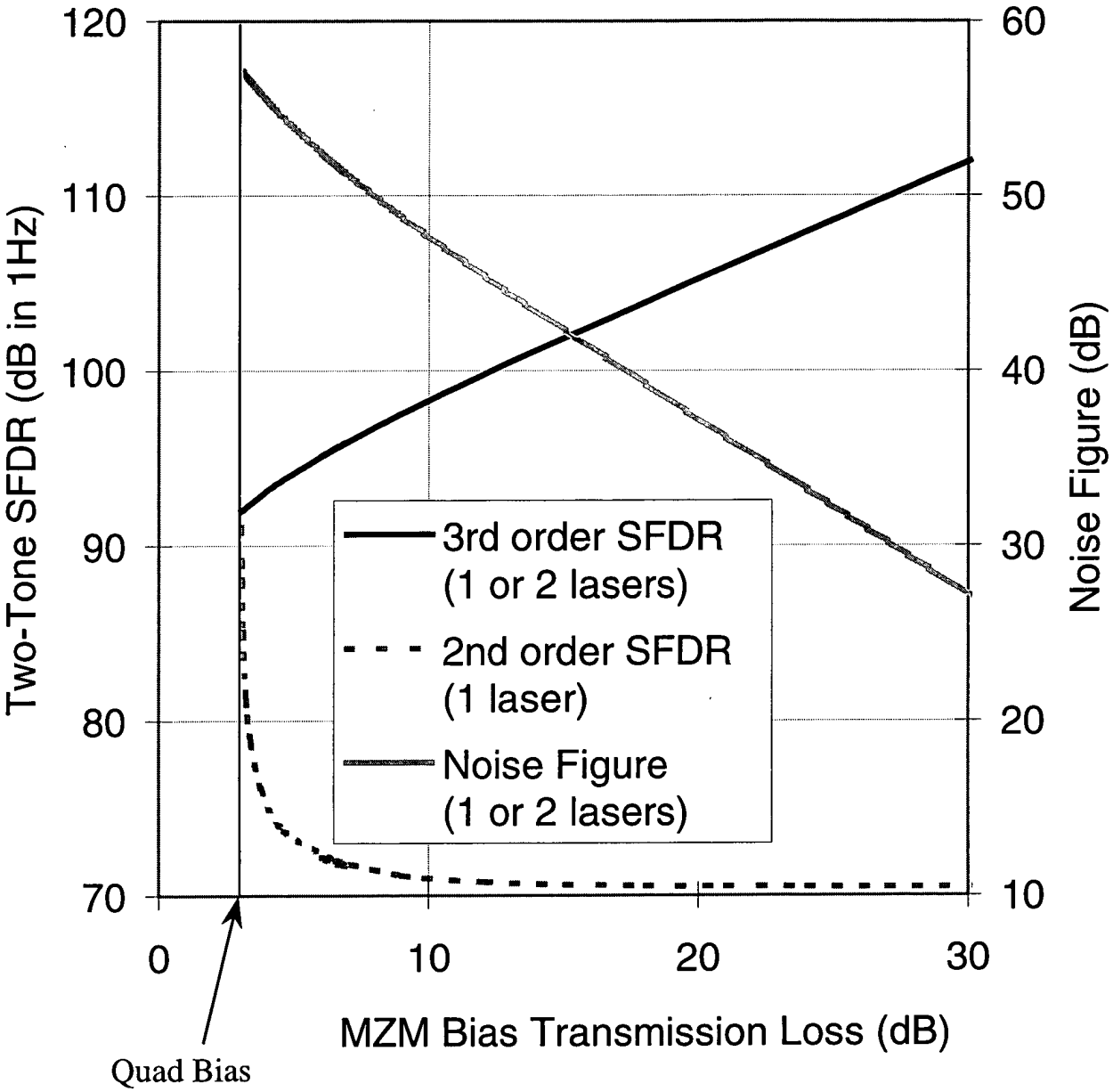
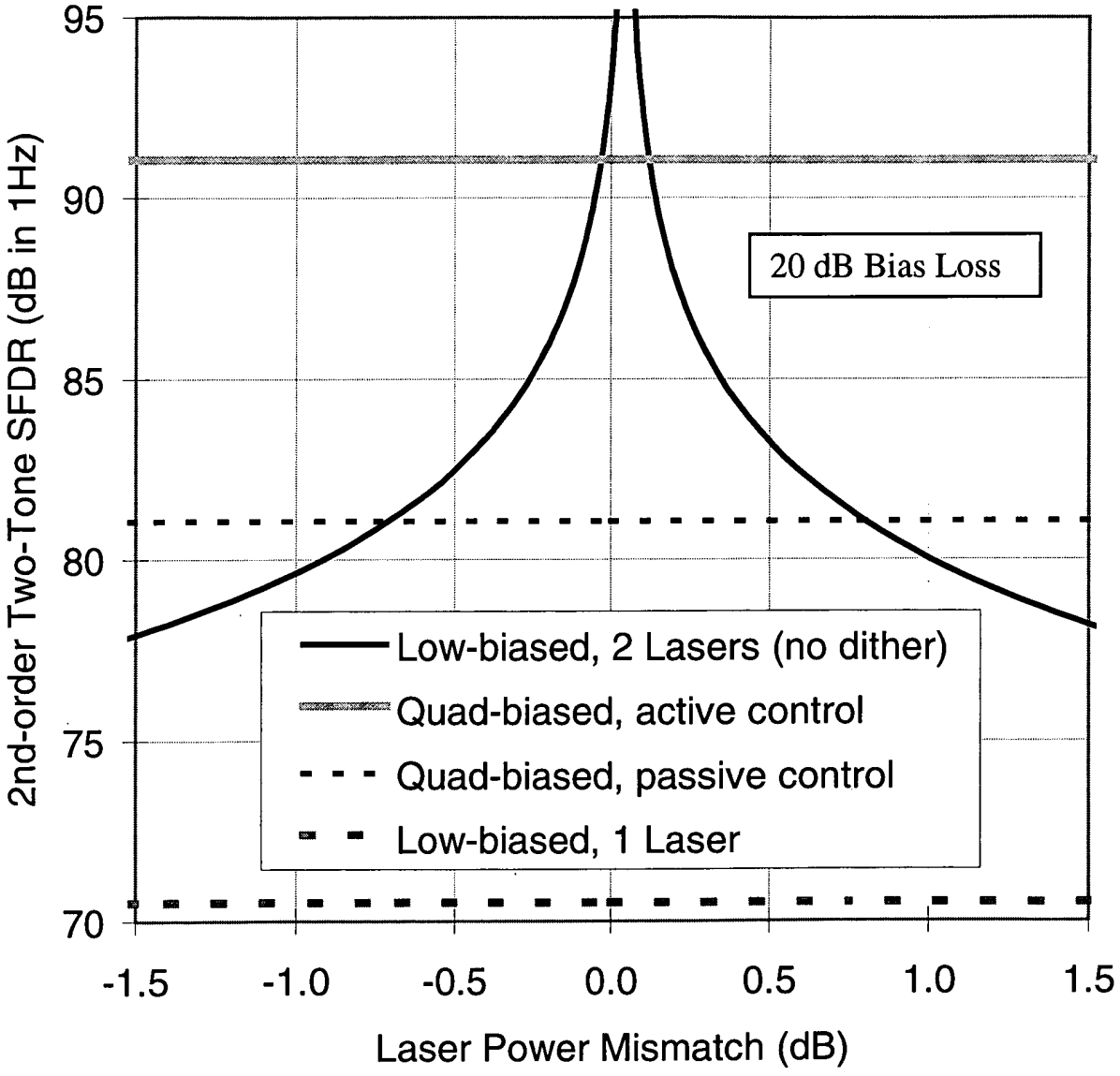


FIG 8

Two Wavelength Approach Improves Low-biased $SFDR_2$



(Laser Outputs to Bias Control Detector Outputs)

FIG 9